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Division of Mycology and Disease Survey

Volume XXIII Number 7

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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXIII Number 7

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NEW RECORDS OF ELSINOË AND SPHACELOMA SPECIES IN THE UNITED STATES

Anna E. Jenkins

Recently additional specimens or other records of Elsinoë and Sphaceloma species in the United States have been assembled (20, 21, 22, 23, 28) as a contribution to the history, distribution, and prevalence of these fungi in this country. The five species concerned were the following:

(1) Elsinoë ledi (Pk.) Zeller (37), causing anthracnose of Labrador-tea (Ledum);

(2) E. veneta (Speg.) Jenkins (15) causing anthracnose of brambles (Rubus);

(3) Sphaceloma rosarum (Pass.) Jenkins (16) causing anthracnose of rose (Rosa);

(4) S. symphoricarpi Barrus and Horsfall (4) causing anthracnose of snowberry (Symphoricarpos sp.);

(5) S. violae Jenkins (31), causing scab of violets and pansy (Viola).

The article dealing with Sphaceloma violae (21) gave distribution records of this fungus obtained since the species was described in 1935 (31). Reference was also made to the discovery of this fungus on violets in the Union of South Africa in 1936 by Doidge. Noble (33) has recently reported serious losses due to scab on violets grown for market in New South Wales, where the disease was first discovered only in 1934 (31) and in 1936 (25) by Harrison.

Other articles already cited (21, 22, 23, 28) served to summarize the distribution of Elsinoë ledi, E. veneta, Sphaceloma rosarum, and S. symphoricarpi in California and Oregon. In this connection were reported new observations of S. rosarum and S. symphoricarpi made during the writer's visit to the Pacific Coast States during the summer of 1937. Certain new historical records of S. rosarum in North Carolina were also established on the basis of previously unidentified specimens gathered there by Professor F. L. Stevens between 1902 and 1907. The additional records of this species thus obtained, together with the record established for Kansas by Dearness (8), were immediately helpful in showing the general distribution of rose anthracnose in the United States (27).

During 1938 and more recently, specimens of the known species of Elsinoë and Sphaceloma in the United States, except S. araliae Jenkins (19)

on Hercules' Club (Aralia spinosa L.) have been obtained from various sources. For convenience of reference these are assembled in this article, and the other six Elsinoë and Sphaceloma species and diseases caused by them, not already named, are listed below:

(1) Elsinoë ampelina (DBy.) Shear (36), causing anthracnose of grape (Vitis);

(2) E. fawcetti Bitancourt and Jenkins (5) Sphaceloma fawcettii Jenkins (12), causing scab of citrus (Citrus), referred to recently (6, 10) as sour orange scab to distinguish it from other forms of citrus scab;

(3) E. randii Jenkins and Bitancourt (26) causing anthracnose of pecan (Hicoria pecan (Marshall) Britton), also known as nursery blight (9, 34) and leaf spot (1);

(4) E. solidaginis Jenkins (30), causing scab of goldenrod (Solidago);

(5) S. menthae Jenkins (19), causing anthracnose of mint (Mentha);

(6) S. perseae Jenkins (17, 18), causing scab of avocado (Persea americana Mill.).

NEW YORK

Elsinoë veneta on wild blackberry (Rubus allegheniensis Porter) and wild raspberry (R. strigosus Michx.) Walton Aug. 28, 1938, A. E. Jenkins.

Sphaceloma rosarum on cultivated rose. East Hampton, Long Island, July 12, and Nanuet (on hybrid tea), Aug. 26, 1938, Cynthia Westcott; Walton, Aug. 26, 1938, A. E. Jenkins. The localities of East Hampton and Nanuet are new for this species.

Sphaceloma violae on cultivated violet, Nyack, Aug. (late in month), 1938, Cynthia Westcott. This is a new locality for violet scab.

Sphaceloma symphoricarpi on snowberry (Symphoricarpos albus Blake var. laevigatus (Fernald) Blake), Walton, May 1 (initial infection); May 29 and Aug. 24, 1938, A. E. Jenkins; Fishkill, June 5, 1938, Mr. and Mrs. A. D. Hoose and A. E. Jenkins; Forest Home, Aug. 3, 1938, M. F. Barrus. These gatherings are all from plantings on which the fungus has continued to be prevalent for a number of years. Its distribution still farther north, in Quebec, has been reported by Conners (7).

MARYLAND

Sphaceloma symphoricarpi on escaped growth of snowberry (Symphoricarpos albus var. laevigatus). Grantsville, July 17, 1938, Mr. and Mrs. J. A. Stevenson and A. E. Jenkins.

This isolated roadside growth of snowberry is the same as that on which the writer collected this species in August, 1928 (13, 14). There was then only a small group of snowberry plants, but in the meantime it had spread over a considerable area. The infection in 1938 was fully as severe as ten years previous. Although the berries were young, the plants gave the general appearance of an autumn condition owing to the brown and torn aspect of many of the leaves and to defoliation.

VIRGINIA

Sphaceloma violae on wild violet. Vicinity of Colonial Village, Sept. 25, 1938, B. H. Hunnicutt Jr. and A. E. Jenkins. During this autumn season the infection was more severe and extensive than when this fungus was discovered at this same place in May 1937 (21).

NORTH CAROLINA

Sphaceloma rosarum on rose, Robbinsville, Aug. 6; Murphy, Aug. 9; and Canton, Aug. 17, 1909, F. L. Stevens.

These three additional specimens from the Mycological Collections of the late Prof. F. L. Stevens add new localities to the known distribution of this species in North Carolina. As in the case of the other specimens reported in 1938 (28), these were hitherto unidentified.

Elsinoë randii on leaves of pecan. Although there is no record of this fungus for North Carolina in the Division of Mycology and Disease Survey, Dr. R. F. Poole has recently written that he has often seen E. randii on pecans in that State and that the anthracnose has caused damage in some seasons.

GEORGIA

Elsinoë solidaginis on goldenrod (Solidago serotina Ait.) Savannah, Ga., Oct. 6, 1938, H. H. Hill. Additional hosts and distribution records of this species are given elsewhere (29).

FLORIDA

Elsinoë fawcetti on green fruit or leaves of calamondin (Citrus mitis Blanco), rough lemon (C. limonia Osbeck), sour orange including willow leaved sour orange (C. aurantium L.), and Sampson Tangelo (grapefruit x Dancy Tangerine), Lake Alfred, May 10-12, 1938, W. A. Kuntz; on Duncan grapefruit and on sour orange, Vero Beach, May 13, 1938, W. A. Kuntz; on Marsh grapefruit, Merritt Island, May 13, W. A. Kuntz; on sour orange and grapefruit, Conway, 1938, W. A. Kuntz.

E. fawcetti has recently been reported on grapefruit, tangelo, and Persian lime (C. aurantifolia L.) in Dade County, in 1938 by Ruehle (35).

Sphaceloma perseae was more prevalent on avocados in Dade County during the past year than in 1937 according to Ruehle (35). An early record (1915) of this fungus on Trapp avocado in the same county has recently been established.

TENNESSEE

There is no definite record in the Division of Mycology and Disease Survey of Elsinoë ampelina in Tennessee, but the following statement has recently been received from Dr. C. D. Sherbakoff:

"Anthracnose of grape is fairly common in Tennessee, I should say, at least in East Tennessee, where I had an opportunity to observe the disease on several occasions."

INDIANA and MICHIGAN

The records for reports from Indiana and Michigan concern only Sphaceloma menthae, whose distribution is still not known outside these two States.

In Indiana, where Dr. Baines has made a special study of the anthracnose (2), he has already noted in the Plant Disease Reporter (3) that at the close of July 1938, infection of mint by this fungus was severe in many large fields in northern Indiana, where those planted in the spring as well as older stands were affected. Although only slight loss had been occasioned on the first cutting of peppermint, then being distilled, he stated that severe infection and loss would likely result on the second growth in severely infected fields.

In autumn specimens of the Sphaceloma on several different kinds of mint were contributed by Dr. Baines for herbarium purposes. Six kinds of mint were represented as follows: (1) Field mint (Mentha arvensis L.), (2) Japanese mint (M. arvensis L. var. piperascens Malinvaud), (3) curled mint (M. crispa L.), (4) state peppermint (M. piperita L.), (5) English or black peppermint (M. piperita L. var. vulgaris Sole), and (6) Scotch spearmint (M. spicata L.). Infection was abundant in all cases, and extremely so on the last three kinds of mint named, where the stem symptoms that gave the anthracnose the name of "leopard spot", applied by growers, were particularly in evidence.

Dr. Nelson, who has made observations on mint anthracnose in Michigan (32), has recently written that during the summer of 1938 he observed the disease in a number of commercial mint fields in this State. The disease

was perhaps more abundant than previously, he stated, because of the fact that there was more rain in August and early September than had been usual for the past several years. He continued: "The disease is appearing in the larger mint-producing sections and is the cause of more concern each year. I saw last year one farm on which the cultivation of mint had been abandoned owing to the inroads of anthracnose and wilt."

WISCONSIN

Elsinoë veneta on wild raspberry (Rubus occidentalis), Verona in woodland, July 26, 1938, A. E. Jenkins and E. M. Martin; Blue Mounds (woodland) Dane County, Aug. 11, 1938, H. E. Greene and A. E. Jenkins.

Sphaceloma symphoricarpi on cultivated snowberry (Symphoricarpos albus var. laevigatus), Madison, Agricultural Campus, University of Wisconsin, Aug. 1 and 9, 1938, A. E. Jenkins. Infection was observed on only this one planting, which became increasingly disfigured as observed at intervals during the month of August. A previous record had been obtained from Madison in 1927, when Dr. R. E. Vaughan sent specimens for identification, stating that several had been received during that season.

OREGON

Elsinoë ledi (Pk.) Zeller on Ledum glandulosum Nutt., Lincoln County, along the coast between Waldport and Yachata, Oct. 22, 1938, S. M. Zeller.

CALIFORNIA

Sphaceloma rosarum on cultivated rose, Palo Alto, July 24, 1938, M. W. Gardner. This new record for California has previously been mentioned in the Reporter (11).

Elsinoë ledi on Ledum glandulosum Nutt., Marin County, 4 miles north of Inverness, Nov. 8, 1936, Lee Bonar (Univ. Cal. Herb. 568906). During 1938, this fungus was also observed in Marin County by Dr. Bonar as noted in his letter of March 23, 1939.

Literature Cited

1. Anderson, P. J. et al. Check list of diseases of economic plants in the United States. U. S. Dept. Agr. Bull. 1366: 51. 1926.

2. Baines, R. C. Mint anthracnose. Phytopath. 28: 103-113. 1938.

3. _____ Diseases of mint in Indiana. U. S. Bur. Plant Indus. Plant Disease Reptr. 22: 327. 1938.

4. Barrus, M. F. and J. C. Horsfall. Preliminary note on snowberry anthracnose. Phytopath. 18: 797-801. 1928.

5. Bitancourt, A. A. and A. E. Jenkins. Elsinoë fawcetti, the perfect stage of the citrus scab fungus. Phytopath. 26: 393-396. 1936.

6. _____ Sweet orange fruit scab caused by Elsinoë australis. Jour. Agr. Res. 54: 1-18. 1937.

7. Conners, I. L. Thirteenth annual report of the Canadian Plant Disease Survey, Dominion of Canada Dept. Agr. Exp. Farms Branch 1933: 74. 1933.

8. Dearness, J. Sphaceloma rosarum (Pass.) Jenkins, Gloeosporium rosaecola Dearn. and Barth. nomen nudum. Mycologia 29: 561-562. 1938.

9. Demaree, J. B. Nursery blight. In Diseases of pecans in the southern states. U. S. Dept. Agr. Farmers' Bull. 1672: 9-11. 1931.

10. Fawcett, H. S. and A. E. Jenkins. Sour orange scab. In H. S. Fawcett, Citrus scab and its control, 2nd ed., rev. p. 529-530. 1936.

11. Gardner, M. W. Rose anthracnose in a new location. U. S. Bur. Plant Indus. Plant Dis. Reptr. 22: 357, Sept. 15, 1938.

12. Jenkins, A. E. The citrus scab fungus. Phytopath. 15: 99-104. 1925.

13. _____ Sphaceloma symphoricarpi (on snowberry). U. S. Bur. Plant Indus. Plant Dis. Reptr. Sup. 73: 393. 1929. (In this note the year 1927 should be corrected to 1928.)

14. _____ Sphaceloma symphoricarpi. Mycologia 22: 106-110. 1930.

15. _____ Elsinoë on apple and pear. Jour. Agr. Res. 45: 696. 1932.

16. _____ Rose anthracnose caused by Sphaceloma. Jour. Agr. Res. 45: 321-327. 1932.

17. _____ A species of Sphaceloma on avocado. Phytopath. 24: 84-85. 1934.

18. _____ Sphaceloma perseae the cause of avocado scab. Jour. Agr. Res. 49: 859-869. 1934.

19. _____ New species of Sphaceloma on Aralia and Mentha. Jour. Wash. Acad. Sci. 27: 412-414. 1937.

20. _____ Distribution of rose anthracnose in California. U. S. Bur. Plant Indus. Plant Dis. Reptr. 21: 316-317. 1937.

21. _____ Additional records of violet scab. U. S. Bur. Plant Indus. Plant Dis. Reptr. 22: 86-88. 1938.

22. Jenkins, A. E. New records of anthracnose of Labrador Tea (Elsinoë ledi) and of snowberry (Sphaceloma symphoricarpi). Phytopath. 28: 374-375. 1938.

23. _____ Distribution of Sphaceloma on Elsinoë in California. U. S. Bur. Plant Indus. Plant Dis. Reptr. 22: 187-188. 1938.

24. _____ Early photographic records of avocado scab in Florida and Cuba. Calavo News. In press.

25. _____ and A. A. Bitancourt. Doenças das plantas causadas por fungos dos generos Elsinoë e Sphaceloma. Rodriguesia 2 (Num. esp.): 305-313. 1936 (1937).

26. _____ _____ An Elsinoë causing an anthracnose on Hicoria pecan. Phytopath. 28: 75-78. 1938.

27. _____ and L. M. Massey. Rose anthracnose. Amer. Rose Ann. 1938: 136-141. 1938.

28. _____ and F. P. McWhorter. Additional records of rose anthracnose in the United States. Phytopath. 28: 360-363. 1938.

29. _____, L. G. Polhamus, and H. H. Hill. New hosts and distribution of Elsinoë solidaginis. Phytopath. 29: In press. 1939.

30. _____ and H. G. Ukkelberg. Scab of goldenrod caused by Elsinoë. Jour. Agr. Res. 51: 515-525. 1936.

31. Massey, L. M. and A. E. Jenkins. Scab of violet caused by Sphaceloma. Cornell Univ. (N.Y.) Agr. Exp. Sta. Mem. 176, 9 pp. 1935.

32. Nelson, R. Peppermint diseases. Michigan Muck Farmers' Assoc. Proc. 18: 44-54. 1936.

33. Noble, R. J. Australia: Notes on plant diseases recorded in New South Wales for the year ending 30th June 1938: 25 M-26 M. 1939.

34. Rand, F. V. Nursery blight. Some diseases of pecans. Jour. Agr. Res. 1: 305-312. 1914.

35. Ruehle, G. D. Notes on fruit diseases in Dade County, Florida in 1938. U. S. Bur. Plant Indus. Plant Dis. Reptr. 23: 38-41. 1939.

36. Shear, C. L. The life history of Sphaceloma ampelinum de Bary. Phytopath. 19: 673-679. 1929. Illus.

37. Zeller, S. M. and J. W. Deremiah. An anthracnose of Ledum caused by a species of Elsinoë. Phytopath. 21: 905-972. 1931.

(Division of Mycology and Disease Survey).

HOP ANTHRACNOSE

G. R. Hoerner

Following the publication of a note on hop anthracnose in The Plant Disease Reporter in 1938 1/, our attention was directed to herbarium specimens in our possession which had not previously been given careful detailed consideration since the disease is neither common nor of great economic importance in Pacific Coast hop-producing areas.

The following specimens of infected hop leaves were available:

1. Collected at Waterville, N. Y. in 1911 by F. M. Blodgett.

2. Collected at the Madden Yard, Deansboro, N. Y., May 26, 1915 by F. M. Blodgett.

3. Collected at the Barbee Yard, Sangerfield, N. Y., August 23, 1915 by F. M. Blodgett.

4. Collected at the Harris Yard, Waterville, N. Y., August 31, 1915 by F. M. Blodgett.

5. Collected in Clackamas Co., Oregon, in June, 1930 by H. C. Williamson.

6. Collected in Clackamas Co., Oregon, July 17, 1930 by H. C. Williamson.

On July 9, 1930, H. P. Barss examined an additional specimen collected in Clackamas County, Oregon, by H. C. Williamson and reported it similar to specimen No. 6 above.

On October 21, 1930, F. M. Blodgett reported that a specimen collected in New Hampshire in 1929 by H. H. Whetzel was similar to the fungus with which he had been working and to which he referred as Colletotrichum sp.

Halsted is credited with having discovered the disease sometime previous to 1904 2/. Charles Chupp, in a note submitted to the Plant Disease Survey, refers to the disease as follows:

1/ Stevenson, J. A. A note on hop anthracnose. Plant Disease Reporter 22: 125-126. 1938.

2/ Myrick, Herbert. The hop, its culture and care, marketing, and manufacture. 300 pp. Orange Judd Co., New York. 1904. p. 155.

"Colletotrichum sp. (Anthracnose) On Humulus lupulus New York; 1932 - Oneida County, first noted June 19. According to Kirby and Honey quite common. Eighty percent of the plants infected but only a few leaves per plant."

F. M. Blodgett, however, apparently first noted the disease in New York State in 1911. On the basis of interesting unpublished data, he has apparently studied the causative organism in more detail than any other worker.

On February 13, 1939, specimens 1 to 6, referred to above, were carefully examined and compared with a portion of an infected leaf of Humulus lupulus L. collected at Manhattan, Kansas, June 2, 1890 by May Varney and labeled Colletotrichum sp.

Morphologically, spore measurements of all six specimens were reasonably comparable. The diameter of the leaf spots in the Oregon specimens ranged from 1 to 6 microns. Setae, when present, were few and scattered. Spore measurements were also variable ranging, in microns, from 3.6-6.7x 10.6-18.2, average 5.15x14.4.

A comparison of reported measurements of conidia, in microns is of interest:

Source of Specimen	Measurements
Kansas	5-6x13-20, average 5.5x16.5 (Stevenson)
Manitoba	4-6x14-21, average 5.0x17.5 (Bisby)
New York	3.5-5x11-17, average 4.25x14.00 (Blodgett)
Oregon	3.6-6.7x10.6-18.2, average 5.15x14.4 (Hoerner)
Wisconsin	3-5x7-18, average 4.0x12.5 (Stevenson)

On oatmeal agar, Blodgett reported a range in sizes of conidia of 3.5-6.2x9-32, average 5.35x20.5 microns.

The slight differences reported in the diameters of the leaf spots, abundance and sizes of setae and spore measurements do not appear to be sufficiently great to justify the establishment of more than a single species.

In view of the fact that the perfect stage of the fungus has not been reported it would appear that it should, for the present at least, be referred to the Fungi Imperfecti. In all probability, all the leaf spots of hops so far reported as hop anthracnose are caused by the same organism, namely, Colletotrichum humuli Dearness 3/.

(Division of Drug and Related Plants, Bureau of Plant Industry).

3/ Bisby, G. R., A. H. R. Buller, and John Dearness. The fungi of Manitoba. Longmans, Green & Co., New York. 194 pp. 1929. p. 132.

BACTERIAL RING ROT OF POTATOES IN CALIFORNIA

P. A. Ark

A bacterial ring rot of potatoes was found in potato tubers grown in California in 1938. Potato tubers of the variety White Rose showed an internal discoloration (from creamy yellow to brownish) in the vascular bundles, similar to those described by Stapp[1] and Racicot, et al.[2]. The specific microorganism recovered in pure culture has only recently been identified. The organism is best isolated from slightly discolored vascular areas of diseased potatoes. It was found to be culturally and physiologically identical with Phytomonas sepedonica as described by Stapp[1] and more recently by Burkholder[3]. Inoculation of the organism into potato seed pieces (var. White Rose) produced wilt in the plants in from two to three months. The organism was also recovered from the stems cut off near the eyes of infected tubers.

Distribution and incidence of the disease in the State has not yet been determined.

(University of California, March 29).

NORTHWESTERN ANTHRACNOSE OF APPLE REPORTED FROM MASSACHUSETTS

O. C. Boyd

About two weeks ago, a canker on a small Cortland branch sent from Plymouth County had all the indications of the Northwestern anthracnose caused by Neofabraea malicorticis, including typical spores of the fungus, the "guitar-string" fibers stretched along the old canker area, etc. I sent the specimen to M. T. Hilborn of the Maine Station who verified the diagnosis. On March 28, I visited the farm in question and found that the farmer had cut down a McIntosh tree and an unknown variety because they were so badly damaged by the same disease. The seven-year old Cortland had a three-inch canker on the lower trunk and several infected branches. An old seedling apple tree nearby was infected. In all cases, the worst damage

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1/ Stapp, C. Beitrage zur Kenntnis des Bacterium sepedonicum Spieckerm. et Kolth., des Erregers der "Bakterienringfäule" der Kartoffel. Zeitschr. f. Parasitenk. 2: 756-823. 1930.

2/ Racicot, H. N., D. B. Savile, and I. L. Conners. Bacterial wilt and rot of potatoes--some suggestions for its detection, verification, and control. Amer. Pot. Jour. 15: 312-318. 1938.

3/ Burkholder, W. H. The occurrence in the United States of the tuber ring rot and wilt of the potato (Phytomonas sepedonica) (Spieckermann u. Kolthoff) Bergey et al. Amer. Pot. Jour. 15: 243-245. 1938.

occurred from 1937 infections with 1938 cankers being conspicuous only as extensions of the previous season's cankers. There were very few new cankers that started in 1938. The trees had not been well sprayed in the previous years. This apparently is the first report of the disease from Massachusetts.

(Massachusetts State College, April 1).

PINE TIP DIE-BACK IN NEBRASKA

F. R. Lancaster

Pine tip die-back caused by Sphaeropsis ellisii Sacc., was found in Lincoln, Nebraska during the winter of 1938-39 on Pinus sylvestris and P. nigra austriaca. This disease first came to attention on a privately owned specimen tree of P. sylvestris approximately 70 years old. The tree had been given careful culture but now shows signs of decline. The diseased tips are distributed in a fairly uniform manner over the tree.

A nearby windbreak, 30 to 40 years old, of P. nigra austriaca and P. sylvestris was scouted to determine the local extent of the disease. A few trees within 100 yards of the specimen P. sylvestris contained some diseased tips. Only P. nigra austriaca in the windbreak was affected, however, and that very slightly.

It is believed that this is the first report of the occurrence of S. ellisii in Nebraska.

(Observations by the Department of Plant Pathology, College of Agriculture, Lincoln, Nebraska, in cooperation with the Division of Forest Pathology, Lincoln, Nebraska Branch).

BRIEF NOTES AND A REQUEST

WHEAT DISEASES IN OKLAHOMA: Nothing striking in the pathological line has come to my attention this spring in Oklahoma. Leaf rust [Puccinia rubigo-vera tritici] is present in every field but has not made much progress during the dry weather of the past month. The warm weather is eliminating the Septoria tritici which was abundant a few weeks ago, and our main wheat problems at the moment are entomological rather than pathological. (K. Starr Chester, April 1. Oklahoma Agricultural and Mechanical College).

APPLE SCAB IN NEW YORK: Ascospores of the apple scab fungus [Venturia inaequalis] are nearing maturity rapidly now. A sample collected April 7 at Modena (Ulster County) showed spores formed in 83 percent of the perithecia and in 17 percent of the perithecia over 50 percent of the asci contained colored spores. No spore discharge has been obtained in the

laboratory yet but may be expected after a few more showers. Leaves collected from other parts of the Hudson Valley show about the same stage of advancement. (D. H. Palmiter, April 8. New York State College of Agriculture).

CEDAR RUSTS IN OKLAHOMA: Gymnosporangium spp. were fruiting in abundance on March 26, and collections were made of G. clavipes and G. betheli neither of which is recorded for Oklahoma in Arthur's Manual, while G. juniperi-virginianae was found on Juniperus chinensis which appears to be the first record on this host. The determinations were by Dr. W. W. Ray. (K. Starr Chester, April 1. Oklahoma Agricultural and Mechanical College).

MATERIAL OF PSEUDOPERONOSPORA SPP. WANTED: Dr. G. R. Hoerner, agent of the Division of Drug and Related Plants, Bureau of Plant Industry, at the Oregon State Agricultural College, Corvallis, Oregon, writes "I would appreciate it if readers who are in a position to do so would supply me with not only herbarium specimens but also with living material of all species of Pseudoperonospora that may become available during the season."

MARCH WEATHER

March, 1939, was characterized, in general, by abnormal warmth and most sections of the country were relatively dry. Fig. 1 shows that the mean monthly temperatures were above normal everywhere, except in a limited northeastern area and very locally in the Great Basin of the West and along the Pacific coast. From the Ohio and lower Missouri Valleys southward the plus departures were from 3° to 6°, and like conditions prevailed in most of the northern Great Plains. In the Rocky Mountain States they were mostly from 1° to 3°, while west of the Rockies the month was about 2° warmer than usual.

Fig. 2 shows that precipitation was unequally distributed geographically. Most of the South had much less than normal; in some Gulf sections the monthly totals were less than one-fourth the normal. Also, the northern Great Plains had but little precipitation. However, in an east-west belt across the south-central Plains, including principally Kansas and parts of eastern Colorado, there was more than normal precipitation. The southern Rocky Mountains had unusually heavy falls, but the far Southwest, especially Arizona, was very dry. In fact, nearly all sections west of the Rocky Mountains had below-normal rainfall, except parts of Nevada and central California. From the central Mississippi Valley and Lake region eastward most stations reported above normal for the month.

(From Weekly Weather and Crop Bulletin for the week ending April 4).

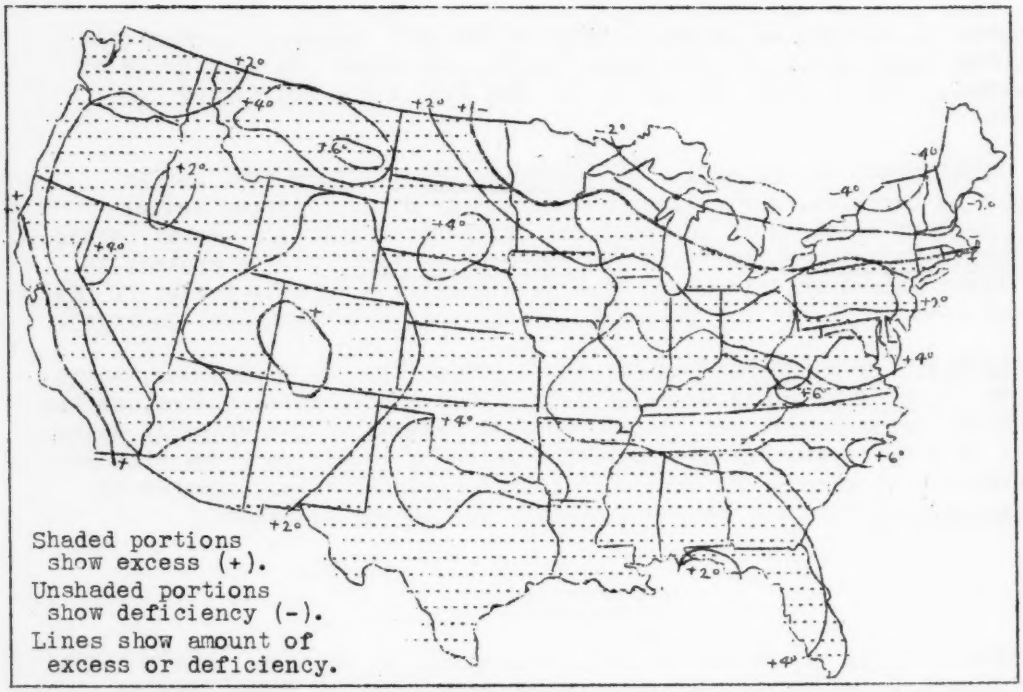

Fig. 1. Departure of Mean Temperature from the Normal for March 1939.

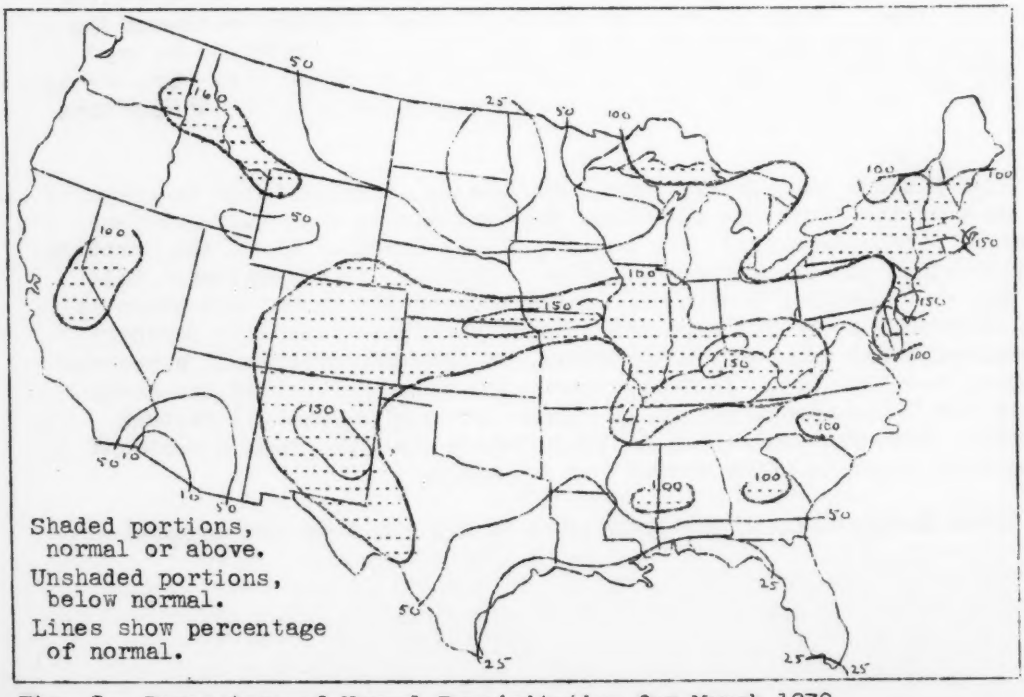

Fig. 2. Percentage of Normal Precipitation for March 1939.